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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,347	06/26/2003	Lien-Ken Lin	4006-258	3645

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EXAMINER	
BENENSON, BORIS	

ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/606,347	LIN ET AL.	
	Examiner	Art Unit	
	Boris Benenson	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Actions

1. Amendment received on 2/23/2006 is entered.

   a. The Specification is amended.

   b. Replacement sheet of drawings is entered and approved. Objection to the Drawings is withdrawn.

   c. Claims 1, 4-6, 8, 10-11, 13-16 and 18 are amended.

   d. New Claim 21 is entered.

   e. Claims 1-21 are pending in the Application.

Response to the arguments

2. Examiner accepts Applicants' explanation that "Stop" the fan means temporally stopped supply of the power to the fan and "Restart" means restoration of previously interrupted supply of the power to the fan. Objections to Claims 1,5,11 and 18 are withdrawn.

3. In view of amendments to Claims 11, 14 and 18 objection to phrase "to stop said fan for a first time" is moot.

4. Applicants' amendments to the Specification and Claims are overcome rejection of Claims 1,4,5,9-10,12, 17 and 20 under 35 U.S.C. § 112. The rejection is withdrawn.

5. Applicants' argument relating to rejection of Claims 1,5,11 and 18 that "in the claimed invention, the fan is always powered even though the fan is stopped" (Page 10) is not clear. On page 9, Applicants stated " "Stop" the fan means temporarily stopped to supply power to the fan. That is, the power is still on but temporarily stopped to power the fan. However, "Restart" the fan means to start a fan that has been stopped. That is, the power has been off. When the fan wants to be restarted, the power has to be on again". The statement is confusing and not convincing.

6. Applicants also argue that Pohl (4,722,019) "directly de-energize the motor, when a locked condition happens, which is different from the claimed invention of stopping the fan". Examiner disagrees with such argument. Pohl disclosed a system and a method of multiple attempts to restart a motor when for one or other reason the motor that is supposed to rotate a compressor stalls. Glorioso et al. teach that a fan comprises a motor that rotates about axis to move blades that in turn cause air to flow. Therefore combination of Pohl with Glorioso et al. teaches a motor to rotate fan and system that allow multiple attempts to restart the motor, if it stalls. The argument is not convincing. Rejection maintained.

7. Applicants argue that Makaran (5,744,921) cuts off power to the motor at step (434) if step (430) indicate a stall or reduced speed. In opinion of Examiner such argument misrepresents Makaran's invention. The argument ignore a fact that box (Start) restarts the motor after 5sec if number of detected stalls is less then 3 or restarts the motor after 75sec if a number of detected stalls is more then 3 and less then 6. Upon detecting that the number of detected stalls is equal to 6, the system sets a diagnostic bit and repeats restart attempts. The diagnostic bit according to Makaran may be alternatively "upon detecting a stall condition, motor controller 110 may disable motor 102 and wait for power to be cycled (e.g., by turning the ignition off and then on again) to re-start the system"(Col.11, Lines 10-14). The argument is not convincing. Rejection maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

> be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-4, 11-13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pohl (4,722,019) in view of Glorioso et al. (6,301,105). Pohl disclosed a Protection Method And Systems For Refrigeration Systems SUTABLE For A Variety Of Different Models. Pohl disclosed, "In the event a locked-rotor condition is recognized whereby the motor/compressor fails to start at all, an appropriate response is to de-energize the motor/compressor, allow a delay interval to elapse, and then allow a limited-number of restart attempts. Although a restart count is thus maintained, after three consecutive minutes of operation without a fault, the restart counter can be reset" (Col.5, Lines 30-37). Such disclose indicates steps to taken in the process:

Stopping the motor (de-energize the motor),

Determining whether or not a number of fan stops is equal to a set number and starting said fan when said number of fan stops is not equal to said set number and repeating steps a. and b. until number of fan stops is

equal to said set number (allow a limited-number of restart attempts)

Determining whether or not said fan can work normally; resetting said set number when said fan can work normally (after three consecutive minutes of operation without a fault, the restart counter can be reset). Flow-diagram (Fig.5A, Box 530) indicates that when number in LRC (Locked Rotor Counter) if more than 6 read number of motor stops is equal to set number procedure "end and call service" read on cutting off power to the motor. Pohl disclosed use of the method and the system for controlling a motor driven load /compressor in particular/. Pohl doesn't disclose the method and system controlling a fan. Glorioso et al. teach, "The fan motor rotates about an axis to move blades that in turn cause air to flow" (Col.5, Lines 65-66). Therefore in order to control rotation of a fan a rotation of the fan motor should be controlled. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Pohl and use the teaching of Pohl to control rotation of a fan motor, because it will provide protection to the fan motor in locked conditions and prevent it from burning down even if attempts to restart it failed.

Referring to Claims 3 and 11, the apparatus includes a switch (Fig.1, Pos.34) controlled by a control system (68). The control system includes a counter (LRC) which advanced each time when locked rotor is detected to count a number of unsuccessful starts (Fig.5A, Box 526) and allow restart if the number is less then a set number of restarts or stops restart attempts if the number is greater (Box 530). The apparatus includes a time delay counter (T2) that prevents restart of the motor for 120 seconds read on stops the motor for a first time.

Referring to Claims 4 and 12, if the motor is working properly for more then 180 second the counter (LRC) is reset (Fig. 5B, Box 570).

Referring to Claims 2 and 13, Pohl disclosed a "The Fig.2 control system is microprocessor-based, and thus includes a suitable microprocessor or microcontroller 200 operating under stored program control in a matter well known to those skilled in the art. While a variety of microprocessor systems may be employed, one which is suitable is a Motorola Semiconductor Type No. M6805 Single-Chip N-Channel Microcontroller, which includes, within a single integrated circuit device, program ROM, RAM, a CPU and a variety of I/O line drivers" (Col.8, Lines 23-33). It

is inherent that a user is able load into the microprocessor a program and setup parameters.

9. Claims 5-10 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makaran (5,744,921). Makaran disclosed a Control Circuit For Five-Phase brushless DC Motor. Makaran disclosed a protection method comprising all required steps (Fig.10 Box 430-448). Makaran didn't disclose a motor being a part of fan assembly. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have use a method of Makaran in fan assembly, because it will provide an adequate protection to the fan.

Referring to Claim 6-7, Makaran disclosed use of microprocessor that includes a non-volatile memory. "Non-volatile memory 204 may also include a separate FLASH or EEPROM memory programmed during the production of motor 102 with data taking into account motor-to-motor variations and special customer requirements" (Col.7, Lines 17-21). A term "special customer requirements" obviously includes a parameters set by user.

Referring to Claim 8, Boxes 434 and 440 are representing counters for counting a first and a second stopping numbers.

Referring to Claim 10, box 432 is analyzing if motor is normally working or stalled. If the motor is working properly it will not be disabled in box 434.

10. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pohl (4,772,019) in view of Makaran (5,744,921). Pohl disclosed all the limitation of Claim 11 as it were discussed above. Pohl didn't disclose a second counter connected to the first counter. Makaran teaches the second counter that counts all restarts and therefore restarts with a first time delays and in the same time enable to provide different time delay after predetermine number of restarts. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Pohl with teachings of Makaran and use a second counter, because it will enable provide complete count and setup different time delay after predetermine number of restarts.

11. Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Makaran (5,744,921) in view of Pohl (4,772,019). Makaran disclosed all the limitation of Claim 18, as it was discussed above. Makaran didn't disclose reset of counters it control circuit detects that the motor functioned properly. Pohl teaches to reset the counters if

it was established that the motor is working properly for at least 180 second. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Makaran with teachings of Pohl and reset counters upon detection that the motor is working properly, because it will enable the control system properly execute stall detection-reset algorithm if stall condition will appear in a future time.

Final rejection

12. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Benenson whose telephone number is (571) 272-2048. The examiner can normally be reached on M-F (8:20-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 ext 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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